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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,698	06/27/2003	M. Benton Frec	58399US002	7675
32692	7590	02/13/2006	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			PARKER, FREDERICK JOHN	
			ART UNIT	PAPER NUMBER

1762

DATE MAILED: 02/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/607,698	<b>Applicant(s)</b> FREE ET AL.	
	<b>Examiner</b> Frederick J. Parker	<b>Art Unit</b> 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/4/05</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12-21-05 has been entered.
2. All rejections and statements of allowance of the previous Office action are withdrawn in view of Amendment and submissions of Declarations under 35 USC 131 and 132.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2,4,9-10,12-15,17-18,23-25,28 are rejected under 35 U.S.C. 102(b) as being anticipated by Fleming US 5209815.

Fleming teaches a method of forming patterned films on semiconductor substrates (inherently forming electronic components, same as Applicants Spec. [0032]) comprising; applying a submicron thick release layer 50 of an aromatic polymer onto a substrate which is ultimately patterned (fig. 2F), over which is also applied a continuous polymer underlayer 52 (e.g. of

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polyimide, etc- col. 4, 15-20) (Fig. 2B), and other layers. Ultimately, adhesive-backed tape 64 lifts off top film layers (Fig. 2J), leaving the patterned release layer 50 and patterned film 62. The release layer may be applied by spin-coating which is the same deposition means as applicants (Spec. Page 6, line 15), such that since both reference and Applicants utilize the identical deposition means for applying the release layer, both would have produced the same patterning results. The release layer inherently must possess a surface energy less than that of the overlying polymer layer, or it would fail in its function as a release layer. The figures indicate the formed sidewalls of the coatings to be substantially perpendicular, per claims 12 and 23. Underlayer 52 is applied by spin coating or other known methods (col. 4, 22-24), same as Applicants. Given the open-ended transitional language of the claim, the claims are open to the additional steps of the reference and accordingly Fleming meets the limitations of the claims as interpreted by the Examiner.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
7. Claims 5-8,11,19-22,27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fleming.

Fleming is cited for the same reasons previously discussed, which are incorporated herein. Fleming teaches applying a polymer layer of 1.9-2.8 microns, the latter being “about 3 microns”, onto the release layer, which overlaps the thickness ranges of claims 5-7, 19-21. The subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made if the overlapping portion of the coating thicknesses disclosed by the reference were selected because overlapping ranges have been held to be a prima facie case of obviousness, see *In re Wortheim* 191 USPQ 90. Since the bond between the release layer 50 and underlayer 52 must be weaker than subsequent layers, the thickness of the release layer and relative thicknesses between the release and overlayers would have been determined by routine experimentation to meet the release requirements for specific coatings, per claims 8,22,27. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the working thickness ranges of Fleming which overlap those of the Applicants’ claims because overlapping ranges have been held to be a prima facie case of obviousness.

It is the Examiner’s position that the mechanical tape peeling of the reference would have suggested other conventional mechanical means of coating removal including impact/ blasting, etc., per claim 11, hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to use such alternate conventional mechanical means in place of the tape peeling system because of the expectation of achieving similar results of coating removal.

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8. Claims 3,16,26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fleming in view of Laubacher et al US 5759625.

Fleming is cited for the same reasons previously discussed, which are incorporated herein. A fluoropolymer release layer is not disclosed.

Laubacher et al teaches on column 1, 43-50 that amorphous fluoropolymers have a “smooth, non-stick character” which resists adherence to other polymers, properties which would make the fluorocarbon polymer beneficial as the polymer-based release layer of Fleming. Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Fleming by utilizing the fluorocarbon polymer materials of Laubacher et al as the release layer because of the low adhesion properties of the fluoropolymer materials to other polymers.

#### ***Response to Remarks and Declaration***

Applicants Remarks and Declarations have been fully considered.

At the outset, the Examiner acknowledges the Declaration of Mikhail Pekurovsky, which is titled as a 131 Declaration, but by its contents is a 132 Declaration, and will therefore be treated as a 132 declaration according to MPEP Rules Section 1.132.

The Examiner also acknowledges the 131 Declaration of Gregory King which removes the Haubrich et al reference as prior art.

Regarding the Declaration of Mikhail Pekurovsky, the Examiner notes there is a comparison of the closest prior art and a single sample made using the claimed process. It is shown using profilometry that the use of a continuous polymer layer over the release layer having a

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substantially constant height with respect to the substrate over the pattern and substrate portion of the claimed method provides an edge pattern which is more sharply defined and cleanly removed during the polymer removal step. The Examiner does not contest the results of this comparison. The Declaration is deficient because (1) the claims and Declaration are not commensurate in scope because the Declaration relies on profilometry results which are absent from the claims, and (2) at least the independent claims recite ANY “release polymer” and independent claims 4 and 14 allow ANY “substrate-adherent polymer”, such that it is not apparent to the Examiner that the claims would work for all polymers in each of the layers, without there being some relationship required by the claims, e.g. shear properties, wetting effects, etc. Thus the Declaration is not commensurate with scope of the claims because it does not convincingly prove that ANY “release polymer” and/ or ANY “substrate-adherent polymer” would work beyond the Example provided and polyimide as claimed. The Examiner further points out the Declaration never makes any assertions that ANY “release polymer” and/ or ANY “substrate-adherent polymer” would work. Thus, the Declaration is not persuasive.


As to Applicants Remarks, the Examiner has withdrawn the previous Prior Art rejections based upon amendments and the 131 Declaration. New rejections are set forth as discussed above, which make Applicants arguments moot.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frederick J. Parker whose telephone number is 571/ 272-1426. The examiner can normally be reached on Mon-Thur. 6:15am -3:45pm, and alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571/272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Frederick J. Parker  
Primary Examiner  
Art Unit 1762

fjp